

IN THE CLAIMS:

1 1. (currently amended) A system for caching of data for a plurality of clients coupled to at least
2 one data source with data resources each identified by a corresponding uniform resource locator
3 (URL); and the system comprising:

4 at least one cache module coupled to selected clients among the plurality of clients to
5 cache data resources requested by the selected clients along with corresponding URLs, and the at
6 least one cache module responsive to update messages identifying URLs of data resources
7 requiring an update, to tag cached copies of the data resources identified in the update messages
8 with a "stale" tag to indicate a lack of coherency between the cached copies and the originals of
9 the data resources in the at least one data source; [[and]]

10 a coherency management module coupled to the at least one data source to monitor data
11 resource copies supplied by the at least one data source in response to requests by the selected
12 clients and to send to the at least one cache module the update messages identifying each URL
13 for which successive requested copies of the corresponding data resource differ from one
14 another[.];

15 wherein the at least one cache module includes a first cache module coupled to a first set
16 of selected clients among the plurality of clients and a second cache module coupled to a second
17 set of selected clients among the plurality of clients; and

18 wherein further the coherency management module includes:

19 a logger to maintain a log table which correlates the first cache module with the
20 URLs requested by the first set of selected clients and the second cache module with the
21 URL's requested by the second set of selected clients;

22 a signature generator to generate a digital signature for each data resource copy
23 supplied by the at least one data source in response to requests by the first and the second
24 sets of selected clients;

25 a signature cache to cache the digital signatures generated by the signature
26 generator along with corresponding URLs, and to tag with the stale tag each URL for
27 which successive digital signatures for the corresponding data resource differ from one
28 another; and

29 an updater to send update messages to a corresponding one of the first and second

30 cache module associated with URLs in the log table for which the corresponding
31 signature in the signature cache includes the stale tag and the updater to remove the
32 corresponding stale tags from the signature cache upon sending the update messages.

1 2. (previously presented) The system of Claim 1, wherein the at least one cache module further
2 comprises:

3 an update fetcher to fetch an update from the at least one data source of cached copies
4 tagged with a "stale" tag.

1 3. (previously presented) The system of Claim 1, wherein the at least one cache module further
2 comprises:

3 an update scheduler to schedule data resource updates to correspond with an availability
4 of the at least one cache module; and

5 an update fetcher responsive to a data resource update scheduled by the update scheduler
6 to fetch updates from the at least one data source of cached copies of the data resources marked
7 with the "stale" tag.

1 4. (previously presented) The system of Claim 1, wherein the coherency management module
2 further comprises:

3 a signature generator to generate a digital signature for each data resource copy supplied
4 by the at least one data source in response to requests by the selected clients;

5 a signature cache to cache the digital signatures generated by the signature generator
6 along with corresponding URLs, and to tag with the stale tag each URL for which successive
7 digital signatures for the corresponding data resource differ from one another; and

8 an updater to send update messages to the at least one cache module for those digital
9 signatures with corresponding URLs tagged with the stale tag and to remove the corresponding
10 stale tags from the signature cache upon sending the update messages.

1 5. (previously presented) The system of Claim 4, wherein the digital signature comprises a hash
2 of the corresponding data resource.

1 6. Canceled

1 7. (previously presented) The system of Claim 1, wherein the data resource comprises a web
2 page.

1 8. (previously presented) The system of Claim 1, with coherency management module located
2 within at least one of a server, a gateway, a router and a switch, coupled to the data source.

1 9. (previously presented) The system of Claim 1, wherein the at least one cache module
2 comprises a plurality of cache modules each coupled to corresponding ones of the plurality of
3 clients and each responsive to the update messages from the coherency management module to
4 tag with the stale tag the corresponding cached copies of the data resources identified in the
5 update messages.

1 10. (currently amended) A method for caching data for a plurality of clients coupled to at least
2 one data source with data resources each identified by a corresponding uniform resource locators
3 (URL); and the method comprising the acts of:

4 caching the data resources together with corresponding URLs requested by the selected
5 clients among the plurality of clients;

6 generating update messages identifying in the requests from the selected clients each
7 URL for which successive requested copies of the corresponding data resource supplied by the at
8 least one data source differ from one another, wherein the generating act further comprises the
9 acts of:

10 creating a digital signature for each data resource copy supplied by the at least one
11 data source in response to requests from the selected clients;

12 caching the digital signatures created in the creating act together with a
13 corresponding URL;

14 labeling with the "stale" tag each corresponding URL for which successive digital
15 signatures cached in the act of caching digital signatures differ from one another;

16 producing update messages identifying each URL labeled with a stale tag in the

17 act of labeling; and

18 removing the stale tags from the URLs identified in the update messages
19 produced in the act of producing; and
20 tagging with a "stale" tag the cached copies of the data resources cached in the caching
21 act and identified in the update messages generated in the generating act, and with the stale tag
22 indicating a lack of coherency between the tagged cached copy and the corresponding original of
23 the data resource in the at least one data source.

1 11. (previously presented) The method of Claim 10, further comprising the act of:
2 fetching from the at least one data source updated copies of data resources cached in the
3 caching act and tagged in the tagging act with a stale tag.

1 12. (previously presented) The method of Claim 10, further comprising the acts of:
2 scheduling data resource updates; and
3 fetching in response to a data resource update scheduled in the scheduling act, updated
4 copies from the at least one data source of data resources cached in the caching act and tagged in
5 the tagging act with a stale tag.

1 13. Canceled.

1 14. (currently amended) The method of Claim [[13]] 10, wherein each digital signature created in
2 the act of creating comprises a hash of the corresponding data resource copy.

1 15. (previously presented) The method of Claim 10, wherein the caching act further comprises
2 the act of:
3 storing the cached data resources together with corresponding URLs at discrete locations
4 each associated with a corresponding subset of the selected clients among the plurality of clients.

1 16. (previously presented) The method of Claim 15, wherein the generating act further comprises
2 the acts of:
3 maintaining a log table which correlates each discrete location of cached data resources
4 with the URLs requested by the corresponding subset of the selected clients associated with each

5 discrete location;
6 creating a digital signature for each data resource copy supplied by the at least one data
7 source in response to requests from the first and the second sets of selected clients;
8 caching the digital signatures created in the creating act together with a corresponding
9 URL;
10 labeling with the "stale" tag each corresponding URL for which successive digital
11 signatures cached in the act of caching digital signatures differ from one another;
12 producing update messages which identify URLs labeled with a stale tag in the act of
13 labeling;
14 targeting update messages produced in the act of producing to the discrete locations using
15 the log table maintained in the act of maintaining to correlate each URL identified in the update
16 messages with at least one of the discrete locations; and
17 removing the stale tags from the URLs identified in the update messages produced in the
18 act of producing.

1 17. (previously presented) The method of Claim 10, wherein the data resource comprises a web
2 page.

1 18. (currently amended) Computer software, tangibly embodied in a computer-readable medium
2 or a propagated carrier signal, for caching data for a plurality of clients coupled to at least one
3 data source with data resources each identified by a corresponding uniform resource locators
4 (URL); and the software comprising instructions to perform the following operations:

5 caching the data resources together with corresponding URLs requested by the selected
6 clients among the plurality of clients;
7 generating update messages identifying in the requests from the selected clients each
8 URL for which successive requested copies of the corresponding data resource supplied by the at
9 least one data source differ from one another, wherein the generating act further comprises the
10 acts of:
11 creating a digital signature for each data resource copy supplied by the at least one
12 data source in response to requests from the selected clients;
13 caching the digital signatures created in the creating act together with a

14 corresponding URL;

15 labeling with the "stale" tag each corresponding URL for which successive digital
16 signatures cached in the act of caching digital signatures differ from one another;

17 producing update messages identifying each URL labeled with a stale tag in the
18 act of labeling; and

19 removing the stale tags from the URLs identified in the update messages
20 produced in the act of producing; and

21 tagging with a "stale" tag the cached copies of the data resources cached in the caching
22 act and identified in the update messages generated in the generating act, and with the stale tag
23 indicating a lack of coherency between the tagged cached copy and the corresponding original of
24 the data resource in the at least one data source.

1 19. (previously presented) The software of Claim 18, further comprising instructions for:

2 fetching from the at least one data source, updated copies of data resources cached in the
3 caching act and tagged in the tagging act with a stale tag.

1 20. (previously presented) The software of Claim 18, further comprising instructions for:

2 scheduling data resource updates; and
3 fetching in response to a data resource update scheduled in the scheduling act, updated
4 copies from the at least one data source of data resources cached in the caching act and tagged in
5 the tagging act with a stale tag.